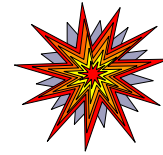


NSLS ES&H HIGHLIGHTS



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No. 41

Date: August 8, 2006

LOTO: Don't Assume a Zero-Energy State

Service or maintenance on equipment that is normally connected to an electrical energy source has the potential to expose workers to serious injury. Electrocution, shock, and arc flash can result in skin burns, eye damage, hearing loss, shocks to the nervous system, muscle contractions, and fatalities. By following accepted lock-out/tag-out (LOTO) procedures to disable machinery or equipment, you can prevent unexpected energization, start-up or release of stored energy. *Don't assume a system is in a zero-energy state.*

All personnel performing Lock-Out/Tag-Out (LOTO) on systems with the potential for electric shock must personally perform the zero energy check by an approved BNL method or must witness an electrician or responsible person perform the test for them. When a responsible person locks and tags a system, they must demonstrate to co-worker(s) that the equipment is safely secured. The responsible person is the first on and last off, and takes responsibility for the zero energy check. At this point, all personnel working on the system must also attach their own locks and tags to ensure that the equipment being disabled remains secure until their own work is complete. Adhere to OSHA requirements, "one person, one lock, one key." A LOTO tree or lock box is used to accomplish this. Be sure that red tags are written clearly and state what work is being performed.

When workers start work on a system that is already locked and tagged, **no one should assume the system is de-energized**. Workers must either: witness the zero energy verification, personally perform a re-verification, or ask the responsible person to demonstrate that the system is safely secured.

After personally witnessing a zero energy verification either by an electrician or responsible person, it is always prudent (not required) for you to perform a zero energy check of exposed conductors before touching them. This non-required secondary check can be completed without Personal Protective Equipment (PPE).

Personnel performing an initial zero energy check are required to be authorized electrical workers. This includes authorization by your supervisor, completing the proper electrical safety training, obtaining a "working on or near" permit, and donning the appropriate PPE (See [NSLS PRM 1.5.0](#) & [1.5.1](#) for further details).

If you ever have a question concerning energy verification, permits, proper PPE, or LOTO procedures, please contact John Aloï (x7018).



Always use an appropriate category meter for the voltage you are measuring.